Syllabus - General Physics B
PHY 2049C, Fall 2011, Sections 2-7

Important notices. (1) Attendance at your first Monday morning class is mandatory; failure to attend will likely result in being dropped from the course. (2) There will be no afternoon laboratories (2049L) during the first two weeks of the semester (see schedule); the first day attendance requirement will be satisfied by attending the first Monday morning class.

Catalog Description:

General Physics B (5 credits). Prerequisite: PHY 2048C or 2048 with a grade of C- or better, or the consent of course leader, Dr. Hill. An introduction to electricity, magnetism and optics for physical science majors, designed to be taken as a sequence with General Physics A (PHY 2048C) and Intermediate Modern Physics (PHY 3101 - remember this entitles you to a Minor in Physics!) Calculus is used. PHY 2049C consists of lectures, recitations, and a laboratory. **You must pass the lab in order to pass 2049C. Note that this syllabus applies only to students registered for sections 2-7; section 1 (the "studio" class) has a completely separate (and different) course structure.** The Liberal Studies Program at Florida State University has been designed to provide a perspective on the qualities, accomplishments, and aspirations of human beings, the past and present civilizations we have created, and the natural and technological world we inhabit. This course has been approved as meeting the requirements for Liberal Studies Area V, Natural Science, and in combination with your other Liberal Studies courses, provides an important foundation for your lifelong quest for knowledge.

Text Book: We will use *Essential University Physics by Richard Wolfson*, Addison Wesley [NOTE: we will use Volume 2 in PHY 2049]. The Laboratory manuals will be available via the 2049L LON-CAPA course web page - see below for further information. Unless you already have one, you will need to purchase an iclicker transmitter (clicker) and register it at http://www.iclicker.com using your official FSU email address (Blackboard login + `@fsu.edu').

Professors associated with the course:

Faculty	Room	Phone	Office Hours	Email Address
Dr. S. Hill, Lecturer Course Leader	310 Keen	645-8793 644-1647	T 8-9am T 12:30-1:30pm	shill@magnet.fsu.edu
Dr. H.-K. Ng	416 Keen	644-4558	MW 10-11am	ng@phy.fsu.edu
Dr. S. Tabor	213 Keen	644-5528	T 2-4pm	tabor@nucmar.phyics.fsu.edu
Dr. O. Vafek	606 Keen	644-5076	M 3:45-4:45	vafek@magnet.fsu.edu

Class Meetings (1) Lectures: Tuesdays and Thursdays

Lecture classes meet in 101 Richards (UPL) from 11:00 am to 12:15 pm. These classes involve demonstrations, worked examples, and discussion of the major concepts and techniques used in this course. In addition, we will have short "pop quizzes" using the iclicker system. Registers of students attending class will be noted. Read the designated text sections before class. With the exception of the final, all exams will be given in Thursday classes (see schedule at the end of this syllabus). Solutions to the exams (except for the final) will be posted on Blackboard. Your individual scores will also be available during the semester via your Blackboard/LON-CAPA account. Discuss any problem which would cause you to miss an exam with Dr. Hill **well before the exam**, unless of course the problem could not be anticipated.

Class Meetings (2) Tutorials: Mondays and Wednesday mornings

Tutorial (recitation) classes meet as scheduled below. This is where you will hone your problem solving

skills in physics and, thus, they act as an excellent preparation for the exams, as well as helping with the homework assignments. **Students will be expected to present their solutions to homework problems in class in order to receive credit for participation (5% of the final course grade).** Homework is completed by inputting answers via the internet using the Learning Online Network with Computer-Assisted Personalized Approach (LON-CAPA) system. **All LON-CAPA homework is due by midnight on the assigned due date; the computer deadline system allows no exceptions!**

Section	Time: Mondays and Wednesdays	Instructor	Room
2	08:00-08:50	Dr. H.-K. Ng	112 UPL
3	09:05-09:55	Dr. H.-K. Ng	112 UPL
4	10:10-11:00	Dr. S. Tabor	112 UPL
5	11:15-12:05	Dr. S. Tabor	112 UPL
6	10:10-11:00	Dr. O. Vafek	114 UPL
7	11:15-12:05	Dr. O. Vafek	114 UPL

Class Meetings (3) Laboratory Classes: Either Mon., Tue., Wed. or Thu. pm

The purpose of the laboratory sessions is to gain hands-on experience with laboratory apparatus, to develop skills in performing experiments, and to learn methods for analyzing scientific data. In order to help you complete the lab assignments efficiently, we have prepared pre-lab exercises within the LON-CAPA homework system (2049L). Lab manuals are also available for download ahead of time within LONCAPA. These exercises are due at noon of the day that your lab is scheduled. Completion of these exercises contributes 25% to your lab grade, i.e., 5% of your final grade. Each student must complete a lab report following the format prescribed by the lab instructor, before leaving the lab session. **Attendance at each lab session is a requirement of the course; any student who is not registered for 2049L needs to discuss this with Dr. Hill during the first week of classes**. If you do not complete a missed lab, you do not get credit for that lab in your laboratory score (see below). **If you miss more than two labs you will automatically receive an "F" grade for the course.** Please make sure you do all of the labs!

Section	Day	Time (all pm)	Room	Instructor (TA, Faculty)
1	Monday	12:30 – 3:30	114 UPL	TBA, Dr. Ng
2	Monday	3:45 – 6:45	114 UPL	TBA, Dr. Ng
3	Tuesday	12:30 – 3:30	114 UPL	TBA, Dr. Tabor
4	Tuesday	3:45 – 6:45	114 UPL	TBA, Dr. Tabor
5	Wednesday	12:30 – 3:30	114 UPL	TBA, Dr. Vafek
6	Wednesday	3:45 – 6:45	114 UPL	TBA, Dr. Vafek
7	Thursday	12:30 – 3:30	114 UPL	TBA, Dr. Hill
8	Thursday	3:45 – 6:45	114 UPL	TBA, Dr. Hill
9	Wednesday	7:00 – 10:00	114 UPL	TBA

Examinations: During the semester, there will be **six mini-exams, one mid-term exam, and one final exam**. The subject of each exam may include **any** previously assigned material. With the exception of the final, all exams will be given in the Thursday classes (see schedule below). Only your best five mini-exam scores will be counted (see below), representing a very significant fraction (25%) of your final grade and a very important component of the course. Below are a few rules and answers to common questions about these exams.

- Six mini-exams will be given during the semester (see schedule below).
- All mini-exams will be given at the beginning of the lecture.
- The material covered will be related to recent or previous LON-CAPA assignment topics. Do not expect to see exact copies of LON-CAPA questions though.
- Each mini-exam will last 25 minutes and must be handed in by the required deadline.
- Students arriving late will be required to turn in their mini-exam by the same deadline as the rest of the class.
- Your final mini-exam score will be based on your five best exam scores.
- Each student is responsible for bringing a working calculator. You are not allowed to utilize equations or physics text programmed into your calculator.
- **All students must bring their FSU ID card with them to all exams.**
- Do not cheat! Cheating on an exam can result in an "F" grade for the course.
- Any grading questions you have **must be resolved** with the course leader, Dr. Hill, **within 2 weeks of the exam**.

Completion of Course and Grading: The course grade will be calculated using the grades from the LON-CAPA problem sets, attendance at recitation classes, the weekly mini-exams and iclicker quizzes/attendance, the mid-term exam, the laboratory reports, and the final exam. These components will be weighted in the following way. Your final grade will be based on your total score in all of these areas. The total course score will then be converted into a letter grade. We will use the table shown below as our guide for determining final grades:

Best 5 of 6 Mini-Exams	25%
Iclicker answers/attendance	5%
Mid Term Exam	10%
Final Examination	20%
Laboratory (+ pre-lab)	15% + 5%
LON-CAPA homework	15%
Recitation Participation	5%
Total	**100%**

Grade	Score	Grade	Score
A	100 – 90	C+	74.9 – 71
A-	89.9 – 87	C	70.9 – 67
B+	86.9 – 83	C-	66.9 – 62
B	82.9 - 79	D	61.9 - 55
B-	78.9 – 75	F	54.9 - 0

Students who do not attempt the final exam will automatically receive a grade of "F" for the course. If you miss more than two labs you will automatically receive a grade "F" for the course. You should keep a record of your point totals for LON-CAPA, the laboratories and exams.

Academic Honor Policy: The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "…be honest and truthful and… [to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at http://dof.fsu.edu/honorpolicy.htm.)

University Attendance Policy: Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Resources for Students:

We want you all to do well in this course. There are resources available to help you towards this goal. Please take advantage of them.

- **Classes:** Attend lectures and recitations. You may not realize it at the time, but what you learn and retain from these classes may surprise you and serve you well during exams.
- **Professors' office hours:** Each of the faculty members instructing this course have scheduled office hours to help students with homework problems and other matters that arise during the course. These times are given at the beginning of this document. Other times may be arranged. Please don't hesitate to call or email us.
- **Physics Department consultation sessions:** After the 2nd or 3rd week of classes a graduate student will be available to assist you with your LON-CAPA homework and in keeping up your average score on the mini-exams! These times are given below.

Consultant	Day	Time	Room
TBA	TBA	TBA	TBA

Free Tutoring from FSU: For tutoring and writing help in any course at Florida State University, visit the Academic Center for Excellence (ACE) Tutoring Services' comprehensive list of tutoring options - see http://ace.fsu.edu/tutoring or contact tutor@fsu.edu for more information. High-quality tutoring is available by appointment and on a walk-in basis. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.
Individual Tutors: If you would like to hire a tutor, check with Ms. Sara Yount in the Physics Graduate/Undergraduate Office on the 3rd floor of the Keen Building (Room 304). She can also be reached either by e-mail (ugrad@physics.fsu.edu) or by calling 644-3245. Ms. Yount has a hardcopy list of physics graduate students who are happy to work (for pay) as tutors.
Americans With Disabilities Act: Students with disabilities needing academic accommodation should:
(1) register with and provide documentation to the Student Disability Resource Center; and
(2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the:
Student Disability Resource Center
874 Traditions Way 108
Student Services Building
Florida State University
Tallahassee, FL 32306-4167
(850) 644-9566 (voice)
(850) 644-8504 (TDD)
sdrc@admin.fsu.edu
http://www.disabilitycenter.fsu.edu/

Course and LON-CAPA Information on the WWW: This syllabus, the laboratory assignments and other information (exam solutions, etc.) related to this course will be posted on the WWW via Blackboard. In order to attempt the LON-CAPA assignments you must have access to the internet. There are numerous computer labs on campus and in the libraries. The Physics Department also has a number of computers that may be used for LON-CAPA, both in your recitation classroom and in the Undergraduate Study Room in 701 Keen. If you have any difficulties locating a computer please contact your recitation instructor. The LON-CAPA web page is at http://loncapa.fsu.edu/ and instructions are available online.

Some Sensible Advice: We want everyone to pass this course. Unfortunately many people find doing physics rather difficult. Below are a few tips to help make your adventures in physics fun.

- Physics is *based on understanding*, not memorization. We will do all we can to help you, but only you can know whether you really understand something or not! Test yourself on additional problems. If, after reading additional problems, you have no idea how to solve them, then you have not understood the concepts. *Do not simply regurgitate the answers*.
- Physics and math are intimately related. Refresh and apply your math skills to solve the problems.
- If you attend all classes and seek help from your instructors during office hours, you should be able to score close to 100% on the LONCAPA assignments. This will, in-turn, help you on the exams. You will be throwing away easy credit, and will almost certainly not succeed in this course if you do not take these assignments seriously.
- In order to prepare for the exams make sure you understand and can do ***all*** of the homework problems on your own. You are strongly encouraged to do extra problems. Do not just memorize the LONCAPA solutions.
- In answering a question, always ask yourself ``Is this answer sensible?" Always check through your solution and don't forget to put the units in!
- Attend all lecture, laboratories and tutorial classes.
- Use the textbook. Try to find time to look over a chapter before and after it is covered in class.
- Use the professors' office hours.
- Find a study partner. *We strongly encourage students to study and learn together.*
- Finally, don't give up or sit for hours trying to do the homework. Discuss your solution with us. Often you will be much closer than you think to being able to solve a problem.
- If you are thinking of dropping the course at any point, please come and talk to Dr. Hill first.

Daily Schedule and Assignments:

Date	Schedule and Assignments	Laboratory
M 29-Aug T 30-Aug W 31-Aug Th 1-Sep	Welcome! Syllabus handed out. **Mandatory attendance.** Lecture 1: Intro. and Ch. 20 – Electric fields Discuss LONCAPA problem set #1 (*Electric Field I*) Lecture 2: Ch. 20 – Electric fields; LONCAPA set #1 DUE	**No laboratory classes this week.**
M 5-Sep T 6-Sep W 7-Sep Th 8-Sep	Labor day – no classes Lecture 3: Ch. 21 – Electric fields and Gauss' law LONCAPA set #2 DUE (*Electric Field II*) Lecture 4: Ch. 21 – Gauss' law. **Mini Exam #1**	**No laboratory classes this week.**
M 12-Sep T 13-Sep W 14-Sep Th 15-Sep	LONCAPA set #3 DUE (*Electric Field III*) Lecture 5: Ch. 22 – Gauss' law and potential LONCAPA set #4 DUE (*Electric Field IV*) Lecture 6: Ch. 22 – Potential	Lab 1 "Distribution functions". Pre-lab exercise due at noon on day of your lab.
M 19-Sep T 20-Sep W 21-Sep Th 22-Sep	LONCAPA set #5 DUE (*Potential I*) Lecture 7: Ch. 23 – Capacitance LONCAPA set #6 DUE (*Potential II*) Lecture 8: Ch. 23 – Energy and capacitance. **Mini Exam #2**	Lab 2 "Electric and magnetic fields". Pre-lab exercise due at noon on day of your lab.
M 26-Sep T 27-Sep W 28-Sep Th 29-Sep	LONCAPA set #7 DUE (*Energy & capacitance I*) Lecture 9: Ch. 24 – DC current LONCAPA set #8 DUE (*Energy & capacitance II*) Lecture 10: Ch. 25 – DC circuits	Lab 3 "Ohm's law and DC circuits". Pre-lab exercise due at noon on day of your lab.

M 3-Oct T 4-Oct W 5-Oct Th 6-Oct	LONCAPA set #9 DUE (*Electric Current & Circuits I*) Lecture 11: Ch. 25 – DC circuits LONCAPA set #10 DUE (*Electric Current & Circuits II*) Lecture 12: Ch. 26 – Magnetic fields/forces. **Mini Exam #3**	Lab 4 "Ammeters and voltmeters". Pre-lab exercise due at noon on day of your lab.
M 10-Oct T 11-Oct W 12-Oct Th 13-Oct	LONCAPA set #11 DUE (*Network Circuits*) Lecture 13: Ch. 26 – Sources of magnetic field LONCAPA set #12 DUE (*Magnetic field I*) Lecture 14: Ch. 26 – Sources of magnetic field	Lab 5 "Null comparator instrument". Pre-lab exercise due at noon on day of your lab.
M 17-Oct T 18-Oct W 19-Oct Th 20-Oct	LONCAPA set #13 DUE (*Sources of Magnetic Field I*) Lecture 15: Catch-up and review for mid-term Mid-term Review **Mid Term Exam**	No laboratory classes or pre-lab this week.
M 24-Oct T 25-Oct W 26-Oct Th 27-Oct	LONCAPA set #14 DUE (*Sources of Magnetic Field II*) Lecture 16: Ch. 27 – Magnetic induction Review mid-term exam Lecture 17: Ch. 27 – Magnetic induction	Lab 6 "Functions of an oscilloscope ". Pre-lab exercise due at noon on day of your lab.
M 31-Oct T 1-Nov W 2-Nov Th 3-Nov	LONCAPA set #15 DUE (*Magnetic Induction I*) Lecture 18: Ch. 28 – AC circuits LONCAPA set #16 DUE (*Magnetic Induction II*) Lecture 19: Ch. 28 – AC circuits. **Mini Exam #4**	Lab 7 "AC circuits I". Pre-lab exercise due at noon on day of your lab.
M 7-Nov T 8-Nov W 9-Nov Th 10-Nov	LONCAPA set #17 DUE (*AC Circuits I*) Lecture 20: Ch. 29 – Maxwell's equations LONCAPA set #18 DUE (*AC Circuits II*) Lecture 21: Ch. 29 – Electromagnetic waves	Lab 8 "AC circuits II". Pre-lab exercise due at noon on day of your lab.
M 14-Nov T 15-Nov W 16-Nov Th 17-Nov	LONCAPA set #19 DUE (*AC Circuits III*) Lecture 22: Ch. 30 – Light LONCAPA set #20 DUE (*Electromagnetic Waves*) Lecture 23: Ch. 30 – Light. **Mini Exam #5**	Lab 9 "Light and lasers". Pre-lab exercise due at noon on day of your lab.
M 21-Nov T 22-Nov W 23-Nov Th 24-Nov	LONCAPA set #21 DUE (*Light*) Lecture 24: Ch. 31 – Optics Thanksgiving – no classes Thanksgiving – no classes	No laboratory classes or pre-lab this week.
M 28-Nov T 29-Nov W 30-Nov Th 1-Dec	LONCAPA set #22 DUE (*Optical Instruments I*) Lecture 25: Ch. 31 – Optics LONCAPA set #23 DUE (*Optical Instruments II*) Lecture 26: Ch. 32 – Interference/diffraction. **Mini Exam #6**	Lab 10 "Optical instruments". Pre-lab exercise due at noon on day of your lab.
M 5-Dec T 6-Dec W 7-Dec Th 8-Dec	LONCAPA set #24 DUE (*Interference & Diffraction*) Lecture 27: Ch. 32 – Interference/diffraction & Review LONCAPA set #25 DUE (*Interference & Diffraction II*) Lecture 28: Review for final	No Labs this week.

Note: the topics listed for each of the T/Th lectures are tentative and may be subject to change.

Final Exam: Monday, December 12th, 12:30 - 2:30 pm; Location TBA

Syllabus Change Policy

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.